# PRINCE EDWARD ISLAND SHELLFISH AQUACULTURE: THE NWPA – CEAA ASSESSMENT PROCESS

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by

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## ABSTRACT

Keen, D.M and D.R. Maynard. 2004. Prince Edward Island Shellfish Aquaculture: The NWPA – CEAA Assessment Process. Can. Manuscr. Rep. Fish. Aquat. Sci.

In 1999, the Department of Fisheries and Oceans determined that the existing 426 surface and/or off bottom aquaculture sites in Prince Edward Island required formal review and approval for compliance with the Navigable Waters Protection Act. This document details the cooperative process developed between the Government of Prince Edward Island, the Prince Edward Island Aquaculture Alliance, the Canadian Environmental Assessment Agency, and DFO's Regional Sections of Fish Habitat, Navigable Waters Protection, and Aquaculture Leasing to bring those aquaculture sites into compliance with the Navigable Waters Protection Act. This resulted in Approval Documents being issued for all 426 sites in February of 2002. Ancillary benefits included the development of a unique "bay by bay" environmental assessment and review process and a monitoring program through an Adaptive Management process.

## RÉSUMÉ

En 1999, le ministère des Pêches et des Océans a déterminé que les 426 sites aquacoles (culture en suspension et sur le fond) à l'Île-du-Prince-Édouard nécessitaient un examen officiel et une attestation officielle de leur conformité à la *Loi sur la protection des eaux navigables*. Le présent document explique la démarche concertée qui a été élaborée par le gouvernement de l'Île-du-Prince-Édouard, l'alliance de l'industrie aquacole à l'Île-du-Prince-Édouard, l'Agence canadienne d'évaluation environnementale, et les sections régionales suivantes du MPO : Habitat du poisson, Protection des eaux navigables et Concessions d'aquaculture, afin de s'assurer que tous ces sites aquacoles soient conformes à la Loi. En février 2002, des documents d'approbation ont été émis pour les 426 sites en question. Cette démarche a eu comme avantage accessoire la mise au point d'un processus unique d'évaluation environnementale aux fins de la gestion de l'aquaculture par baie individuelle et d'un programme de surveillance axé sur le principe de la gestion adaptative.

## 1.0. INTRODUCTION

For a variety of reasons related to both the evolution of the aquaculture industry and the limited resources within the Department of Fisheries and Oceans (DFO) and Transport Canada (TC) at the time, 426 "surface" and/or "off-bottom" mussel and oyster aquaculture sites on PEI had not been assessed and/or permitted under the *Navigable Waters Protection Act* (NWPA). In the past, DFO's Aquaculture Zoning Plan and marking requirements, combined with conditions in the lease contract, were believed to have effectively addressed navigation concerns. Since the early 1990's, the increased number of leases around PEI resulted in an increase in reported water use conflicts. DFO recognized the necessity to assess the leases under the NWPA. In 1999, a federal government legal opinion stated that moored aquaculture sites were projects subject to assessment under the *Canadian Environmental Assessment Act* (CEAA). As such, if there was a trigger (law list, funding, issuance of a permit, federal land) by a federal government department then a CEAA Assessment would be required under the *Act*. Hence, in order that Navigable Waters Protection (NWP) issue a permit for PEI aquaculture sites, a law list trigger under the CEAA *Act* required that a CEAA assessment be conducted. DFO recognized the importance of the Aquaculture Industry to the economy of PEI and was therefore committed to working with the Aquaculture Industry and the Province of PEI to minimize the costs and reduce the economic risk related to an approval process while at the same time ensuring the safety of all stakeholders.

In February 2002, NWPA approval documents were issued to the 426 surface and/or off-bottom aquaculture lease sites on Prince Edward Island. The following summary provides a brief illustration of the process that led to NWPA approvals being issued.

## 2.0. ASSESSMENT PROCESS OPERATIONAL TEAM

The PEI Aquaculture Assessment Process Operational Team was established in July 1999 to ensure the effective development and delivery of government policies and operational plans for the assessment of PEI aquaculture sites under the NWPA and CEAA. The team was composed of DFO staff from NWP, Aquaculture Leasing, Aids to Navigation, Habitat, Communications and the PEI Area Director. Many meetings and conference calls were held to determine the best method to have existing aquaculture sites approved under the NWPA.

DFO Charlottetown staff actively worked with the Province of PEI and the PEI Aquaculture Alliance (PEIAA), and other industry stakeholders to foster a better understanding of the consequences of not moving quickly to address the problems identified on the water. The range of problems consisted of leases not being properly marked, gear outside lease boundaries and gear in the main navigation channels. Both the Province and Industry maintained that existing aquaculture sites should in fact be exempt from the review process. The

Province did agree that the NWPA issue required a commitment to work together to improve the situation on the water.

In September 1999, DFO, the Province and the Aquaculture Industry signed onto the Aquaculture Leasing Co-management process. This resulted in a renewed leasing program, a co-managed, co-funded mechanism that exists under a framework where policy decisions are made and shared by the stakeholders. It was clear that moving ahead on the renewal of the Aquaculture Leasing Program would allow the core leasing program to function and would help to resolve issues such as backlogged applications and policy development, the NWPA review process and pending applications for shellfish aquaculture sites.

## 3.0. NWPA/CEAA OPERATIONAL PLAN – PHASE 1

### 3.1. Waterway Evaluation Steering Committee

The PEI Aquaculture Operational Plan – Phase 1 was developed in the winter of 2000 by the PEI Waterways Evaluation Steering Committee (WESC). This committee, formed in October 1999, was comprised of representatives from DFO (Aquaculture, Habitat and NWP), Public Works Government Services Canada (PWGSC), the Aquaculture Industry (PEI Aquaculture Alliance, Cultivated Mussel Growers group) and PEI Government. (Appendix 1 contains the Terms of Reference and objectives of the Waterway Evaluation Steering Committee.) This Committee worked together and adopted the PEI Aquaculture Operational Plan – Phase I. (Phase II was developed in the winter of 2001). This plan proposed a multi-year initiative to address the NWPA concerns on those surface and off-bottom aquaculture sites on PEI; and built on the partnering agreement that DFO, the Province of PEI and the Aquaculture Industry had developed to manage the renewed aquaculture-leasing program. The plan aimed to 1) be a cost-effective, integrated approach that considered the history of industry development and the concerns of all other stakeholders and 2) identify several action items (i.e. scoping phase, committee membership and development of a marking scheme) with identified leads and time frames. (Appendix 2 contains Phase I and Phase II of the PEI Aquaculture Operational Plan.)

The Scoping Phase was a period of data collection and gap analysis to compile the requirements to address the NWP and CEAA process. Public Works Government Services Canada (PWGSC) developed a proposal to conduct this activity and the Office of the Commissioner of Aquaculture Development (OCAD) funded the proposal.

The WESC continued to meet throughout the process and in November 2000, held a workshop with representatives from DFO-CCG and Industry to determine the key issues and concerns that both sides had with the NWPA review process. The aim of the workshop was to develop a list of potential alternatives and/or

options for the NWPA and CEAA process. The preferred option was that NWPA and CEAA reviews be conducted on a bay-by-bay or Island wide basis

### 3.2. Marking Committee

The PEI Lease Marking Committee was a sub-committee of the WESC. It was formed to meet with Industry groups to develop a consensus on standardized buoy requirements for interim marking of navigational corridors, the informational marking of aquaculture sites and informational signage at wharves and slipways. The Marking Committee was comprised of members from DFO (Aquaculture, NWP, Nav. Aids), Province of PEI and Industry (PEIAA, Mussel Growers Group and Oyster Growers group).

The PEI Lease Marking Committee consulted with the directors of the PEI Aquaculture Alliance, the PEI Cultivated Mussel Growers Association and the Island Oyster Growers Group to determine the best marking system for the surface and/or off-bottom aquaculture sites on PEI. The Committee also held meetings with industry members, on a bay-by-bay basis, between December 1999 and February 2000 to facilitate a standardized marking system for Island waterways. All those having a surface or off-bottom culture aquaculture site in each bay were contacted by letter and advised that meetings were being held to discuss the marking of their aquaculture sites. Meetings began the week of December 6th, 1999 with growers from New London Bay and finished the week of January 31st, 2000 with growers from North Lake, South Lake and Souris River.

In the spring of 2000, the PEI Aquaculture Industry spent in excess of $400,000 to adhere to the new buoy marking standard developed by the PEI Marking Committee. (Appendix 3 contains the latest draft of the PEI Site Marking Policy.) Buoys were to be deployed no later than 2 weeks after ice-out, but a delay in buoy shipments resulted in some buoys still being deployed as late as July. DFO's Aquaculture Division agreed to assist in the first round of buoy deployment and went to all areas to assist growers with locating their corners. The Aquaculture Division continued to monitor lease marking over the entire summer. "Notice to Boaters" information signs depicting the new lease-marking scheme were prepared and displayed by the provincial government at wharves and slipways after the buoys were deployed.

### 3.3. Environmental Issues Sub-Committee

The Waterway Evaluation Steering Committee formed a sub-committee to examine the environmental issues related to environmental assessment and sustainability with the PEI Aquaculture Industry. The Environmental Issues Sub-Committee included members from DFO (Aquaculture, Habitat, and Science), PWGSC, Province of PEI, and Industry. PWGSC was retained by OCAD to lead this process with the intent to prepare for an environmental assessment process.

In the fall of 2000, the Environmental Sub-Committee began to discuss environmental issues and potential mitigation measures for surface or off-bottom aquaculture sites on PEI. At this time, the CEAA assessment process headed in the direction of a bay by bay Model Class Screening Report (MCSR). The Canadian Environmental Assessment Agency, Model Class Coordinator participated and attended Sub-Committee discussions. A Model Class Screening Document was to cover existing sites and "standard" new lease applications. For example, if a screening were to be conducted on a project in New London Bay, hypothetically, as long as the aquaculture site and activity fell within the pre-determined criteria, the grower would be permitted to fill out the screening form and follow established mitigation measures.

The Draft MCSR was finalized and submitted in March 2001 to DFO (Habitat Management) and to Environment Canada (Environmental Assessment Group) for review and comment. Comments were received from Habitat Management, Environment Canada and CEAA. These comments were used to revise the draft MCSR and the final draft was submitted to DFO Habitat Management in April 2001.

## 4.0. SHELLFISH AQUACULTURE ENVIRONMENTAL CODE OF PRACTICE

As a result of the Environmental Sub-Committee discussions, it was recommended that in order to provide a standard of "best management practices" on which to base a CEAA assessment, an Aquaculture Code of Practice be developed.

The PEIAA began developing an Environmental Management Policy known as the PEI Shellfish Aquaculture Environmental Code of Practice (SAECOP) for the PEI Shellfish Aquaculture Industry. This policy would outline the shellfish industry's philosophy on environmental issues and would detail the "best management practices" that would aid the implementation of an Environmental Management Policy. The SAECOP was to establish the environmental policy, objectives and practices for aquaculture activities pertaining to sites marking, spat collection, seeding, grow-out, harvesting, predator control, biofouling control, site maintenance, waste management, vehicle and vessel operation, decommissioning and contingency plans for accidental events (Prince Edward Island Aquaculture Alliance, 2002). It was recognized that aquaculture is dependant on a healthy marine environment and that interactions with other stakeholders had to be identified and considered in the development of an effective Environmental Policy and Codes of Practice. To be certain that all pertinent issues and concerns were identified and addressed in the SAECOP, the PEIAA and the shellfish industry engaged in a comprehensive consultative process. Shellfish growers, federal and provincial governments, key stakeholders and other users of the Island's waterways were consulted and their

opinions and concerns taken into account. In addition to advertisements in local newspapers, letters were sent to groups with an interest in the environmental health of the bays advising them that their concerns related to shellfish aquaculture could be presented to the PEIAA at a meeting held in early May 2001.

In the fall of 2001, a draft environmental code of practice was developed, the Alliance held meetings with shellfish aquaculturalists to review and discuss the draft document. Follow-up meetings were also held in the fall with those interest groups that had made presentations earlier in the spring.

In January 2002, the PEIAA finalized and released the PEI Shellfish Aquaculture Environmental Policy and Environmental Code of Practice (SAECOP). Starting in January 2002, the PEIAA requested Industry members to sign on to the document, thereby agreeing to uphold the mitigation measures identified within. The PEIAA is presently developing an auditing program to identify and work with those industry members who have deficiencies in their application of the SAECOP.

## 5.0. NWPA/CEAA OPERATIONAL PLAN – PHASE II

The Model Class Screening Report was not accepted because the approval process could not be delivered in a timely manner and there were concerns within Fisheries & Oceans National Headquarters and the Regional office on the process.

Phase II of the Operational Plan was developed in February 2001 and reconfirmed that the review would be conducted Island wide, using a bay-by-bay approach. Phase II was based on the principle that DFO would waive the requirement for all existing surface and off-bottom aquaculture sites to formally apply for NWPA review. The PEIAA agreed to provide full support to DFO's efforts to conduct formal assessments under the NWPA and CEAA, and in turn, DFO agreed to recognize the history of aquaculture development on PEI (including the zoning system) and to demonstrate good faith in its efforts to minimize the impacts and costs to the industry while respecting the legal requirements of NWPA and CEAA. Phase II of the Operational Plan included the advertising associated with the NWPA permitting process, public hearings to finalize the Code of Practice for growers (as discussed in the previous section), and collecting information in support of the backlog of new applications that were also awaiting the NWPA-CEAA review.

### 5.1 Site Verification

DFO, the Province of PEI and Industry representatives agreed to a plan to address the outstanding issues of adjusting grower sites prior to the NWPA review so that the sites would be in the best position to meet approval

requirements. A Site Adjustment Panel was formed consisting of one representative from DFO Aquaculture and NWP, and the Province of PEI to meet, on a bay-by-bay basis, with each grower and finalize the acreage and corner coordinates for each site. The panel would be bound by site adjustment guidelines that were developed by the PEI Leasing Management Board. (Appendix 4 contains the Site Adjustment Guidelines as developed by the PEI Leasing Management Board). All changes were recorded in the Aquaculture Division GIS Mapping program. Growers were contacted individually by telephone and informed when the meetings were taking place within their bay.

In June 2001 a team comprised of DFO Aquaculture staff and an NWP Officer began the process of on-the-water site assessments in each bay. This process allowed the NWP Officer to assess navigation impacts and allowed DFO Aquaculture to determine all site locations and boundaries, to amend lease contracts and to revise the GIS Mapping program.

**5.2 Advertisement of Applications for NWPA Approval**

Prior to the advertisement phase of the operational plan, the Aquaculture Division compiled, for each lease, all site documents required for NWPA review. Information included tombstone data, site buoy marking requirement, lease boundaries and co-ordinates, water depths, distance of site to shore and culture method. NWP and DFO Charlottetown staff reviewed and processed all documents. Letters were then sent to all growers going through the review process requesting that they review and verify their NWPA packages at the Aquaculture Division prior to the advertisements appearing in the media.

Advertisements advising that the PEI surface and off-bottom aquaculture sites were applying for NWPA approval appeared in the Canada Gazette (September 22, 2001) and the Guardian, Journal Pioneer, Eastern Graphic, and La Voix Acadienne (September 26, 2001). The advertisements stated that site plans and descriptions (including the navigation markings) were deposited with the Minister of Fisheries and Oceans, at the Aquaculture Division in Charlottetown. In each advertisement there was also a notice that the project was being screened pursuant to the Canadian Environmental Assessment Act. This notification of assessment and the request for written submissions was designed as an element of public participation under the CEAA process. All written comments based on navigation and environmental issues were to be directed to the Superintendent, NWP Program "not more than one month" from the date of the notice. A Letter Review panel composed of DFO (Aquaculture, NWP, Area Director, and Habitat), PWGSC and the Province of PEI was formed to address any complaints that were received. Each written comment was individually sent a combined navigable and environmental response.

## 6.0 CANADIAN ENVIRONMENTAL ASSESSMENT ACT ASSESSMENT

In September 2001 a CEAA working group (an expansion of the Phase I Environmental Sub-Committee) was developed and weekly meetings were held until signoff in February 2002. The working group was comprised of members from DFO (Habitat, Aquaculture, and Area Director's office), PEI Government, PEIAA, and PWGSC. The group also included shellfish grower liaisons that met one on one with individual growers. As the Model Class Screening Report approach had been ruled out, the assessment took the form of bay by bay self directed CEAA screenings.

DFO Habitat reviewed Sect. 74(4) of CEAA to see if any leases were exempt from CEAA review. Section 74(4) outlines that if an existing lease was operational prior to June 22, 1984 and no alterations have occurred since that time, then CEAA does not apply to that lease. As growers in PEI had admitted to modifying their leasing practices since 1984, no leases could be exempted from the CEAA process.

### 6.1 Project Charter for CEAA Assessment

In September 2001, PWGSC was contracted by DFO to conduct Environmental Assessments, including the determinations, for those bays with surface and off-bottom aquaculture. A Project Charter outlining the purpose, project scope and approach, assumptions, roles and responsibilities, time plan and agreement for the process was developed clearly specifying the expectations of each of the DFO groups associated with the assessment. (Appendix 5 contains the Project Charter between PWGSC and DFO.) PWGSC led the project while the Habitat Management Division dedicated one person to work with the process to ensure the issues were addressed.

### 6.2 Bay Identification for CEAA Assessment

As CEAA includes measures to avoid overlap and duplication, attempts were made during the process to save time and resources while ensuring that unique environmental characteristics were considered. To ensure an efficient process, province-wide assessments that were subject to CEAA were divided into 15 regional projects with the grouping based primarily on geographic location. The 15 bays were addressed in separate Environmental Assessment documents. The assessments were conducted with DFO as the Responsible Authority (RA) under CEAA and pursuant to the review and requirement for approval under NWPA. The Public Registry Officer for the project was DFO Habitat in Charlottetown.

The 15 bay categories used for these assessments were:

- Boughton River

- Cardigan, Montague, Brudenell and St. Mary's
- Cascumpec Bay
- Covehead and Brackley Bays
- Egmont Bay and Sunbury Cove, Wolfe Inlet and Victoria
- South and North Lake, Souris and Colville Bay
- Hillsborough Bay
- Malpeque Bay, Darnley Basin
- Murray River, Murray Harbour
- New London Bay
- Rustico Bay, Hunter River
- Savage Harbour
- St. Peters Bay
- Tracadie/Winter Bay
- Vernon/Orwell Rivers

**6.3 Environmental Assessments**

The Environmental Assessment process for surface and off-bottom aquaculture sites on PEI established a baseline set of requirements for each site, so that the assessment could be conducted with confidence that all activities would be included in the Environmental Assessment. Beginning in September 2001, DFO Habitat and PWGSC conducted the Federal Co-ordination Regulations (FCR's). In October DFO Habitat and PWGSC began consultations with DFO Science (Gulf and Maritimes), the Atlantic Canada Opportunities Agency (ACOA), Environment Canada, Canadian Wildlife Service (CWS), Parks Canada (PC) and Transport Canada. Aboriginal consultations were conducted by DFO (Area Director's Office) and PWGSC. Each Federal Authority contacted under the FCR process responded that they did not have any regulatory triggers that would require them to be a Co-Responsible Authority under CEAA. Expert advice under CEAA was provided by each Federal Authority contacted. The Provincial environmental assessment group was also contacted and it was concluded that there was no corresponding Provincial environmental assessment requirement for the existing environmental sites.

A CEAA assessment team was assembled to compile the screening documents and was comprised of a Project Manager, Project Assistant, a mapping support person from DFO, a dedicated Habitat Management Division Officer and consultant support staff responsible for document compilation.

Identified issues and the level of detail required for the Environmental Assessments had to be determined. Experts were identified who provided information and clarification on the expectations of the project. Consultations were held with the CEAA, DFO, EC, PHC, TC, ACOA and the PEI Department of Fisheries, Aquaculture and Environment (DFAE). Under the CEAA Federal Co-ordination Regulations, PHC and EC provided expert advice.

The potential for change in the environment is evaluated through an issues scoping process that is based on the identification of Valued Ecosystem Components (VEC's). These are components of the environment, both natural and social, that are valued by society, and upon which an environmental assessment should be focused. To that end, biophysical and socio-economic issues of concern, in relation to the proposed project, were identified through a detailed issues scoping process. The issue scoping process for each EA was designed to: 1) identify issues and focus the EA on those of relevant concern to CEAA; 2) identify issues in relation to relevant legislation, policy and guidelines; 3) identify relevant environmental and socio-economic issues for the scope of the project; and 4) identify potential cumulative environmental effects to be factored into the assessment. The identification of VEC's for this project was based on a scoping approach that included the consideration of a long list of environmental components. The environmental components considered were:

- Fish Habitat (water quality, substrate, feeding, migration, spawning)
- Fish
- Phytoplankton
- Air quality
- Species/habitats at risk
- Birds and bird habitat
- Marine mammals
- Marine plants
- Environmentally significant or protected areas
- Aboriginals
- Commercial, recreational and Aboriginal fisheries
- Navigation
- Other aquaculture operations
- Public health
- Noise

Based on the analysis of the potential project-environment interactions, stakeholder concern and existing knowledge of environmental effects of shellfish aquaculture, the list was further focused to identify the final VEC's for consideration during the EA for each bay. It was not required to carry those components, which had negligible potential interactions with the project, through the complete EA analysis. The VEC's for the shellfish aquaculture assessments were considered to be fish and fish habitat, seabirds, Aboriginal and socio-economic issues.

For the Environmental Assessment for each bay, the potential effect of each project phase (i.e. operation/maintenance, decommissioning, and malfunctions/accidental events) was evaluated for each VEC where, on the basis of the issue scoping, a potentially important project interaction was expected to occur. For this process, a rigorous sequence of steps was followed to ensure a

logical, comprehensive and defensible evaluation was conducted. The following steps were followed in evaluating the potential effects for each VEC selected:

- Determination of study boundaries (project, administrative, ecological, and socio-economic
- Definition and evaluation of impact significance
- Description of existing environment
- Analysis of potential project/environmental interaction and effects
- Mitigation and residual impact analysis
- Summary of effects assessment

Cumulative environmental effects were also considered during this CEAA process. An important component of assessing cumulative environmental effects under CEAA includes the identification of past, present, and likely future projects that could interact in combination with the project. The cumulative effects assessment in each EA focused primarily on two potential areas of interaction, 1) potential cumulative effects of multiple aquaculture operations within the bay system with other anthropogenic influences in the bay, including watershed use and run-off; and 2) potential cumulative effects of the above interactions within each bay with those adjacent waterways.

Under CEAA, each assessment must consider the potential effects that the environment may have on the project. Within the scope of these EA's, potential effects of the environment on the project consisted of:

- Weather – storm events can adversely affect the physical integrity of aquaculture operations;
- Ice – ice movement can adversely affect the physical integrity of aquaculture operations;
- Climate change – sea level rise may implicate aquaculture operation through changing water levels and water quality, weather patterns and;
- Anthropogenic sources of pollutants – inputs may affect water quality and shellfish quality (bacteria and pathogens).

The assessment itself used historic as well as contemporary environmental baseline data. Several data sets were compiled into GIS software and information extracted to conduct the assessment of residual significance as well as the evaluation of potential cumulative effects.

The table of contents of the New London Bay Assessments is shown in Appendix 6 (DFO, 2002). This Appendix provides an overview of the components of each bay assessment.

### 6.4 Aboriginal Consultations

Recent legal precedent had shown the importance of consulting Aboriginal groups in order to understand what, if any interaction the aquaculture sites and activities would have on Traditional Aboriginal Fisheries. The PEI Area Director's Office headed the consultation process with assistance from the DFO First Nations Liaison (Gulf Region) and PWGSC. Meetings were held with the Abegweit First Nation, Lennox Island First Nation and the Native Council of PEI. The consultations consisted of face-to-face meetings where the First Nations groups were provided with packages showing the location and extent of all PEI shellfish aquaculture sites under assessment and an overview of the process. This allowed an opportunity for First Nations to provide their input and contribute to the assessment. Follow up communication provided information on the issues and concerns associated with the shellfish aquaculture project and led to the selection of the Aboriginal VEC for this assessment.

### 6.5 One on One Meeting with Growers

Between October 2001 and February 2002, each person with a surface or off-bottom aquaculture site met with a shellfish grower liaison person (from the CEAA Working Group) to complete a Project Environmental Information Form (PEIF) for each site. The Project Environmental Information Form is shown in Appendix 7. The PEIF affirmed that the site was operated in accordance with existing policies and regulations, provided site specific information on shellfish stocking and harvesting strategies, described predator interactions with shellfish and mitigation measures, characterized the physical conditions found on the substrate including marine plants and the marine species found on and which move through the lease. Each shellfish grower liaison project team member was trained to use standardized data collection methods to ensure consistency. Information collected on the PEIF was treated as a form of traditional ecological knowledge.(TEK) in the assessment. The site-specific issues that were associated with potential effects of the environment on their lease (i.e. weather, ice) were also assessed in the individual PEIF. The issues were considered in the grower's analysis of the viability of the lease and were considered mitigable through design and siting, and standard operating, maintenance and repair procedures. Through the data collection process, the assessment team became aware that components of the PEIF information could be used by other shellfish aquaculture growers to gain a strategic business or economic advantage. After consultation with CEAA, it was decided that selected PEIF information (related to competitive business concerns) would not be published as part of the CEAA Screening report. The information is retained by DFO Habitat Management and pending the circumstances for disclosure is available through Federal information access channels.

### 6.6 Mitigation/Compliance Monitoring Plans

Mitigation measures that were identified in the Environmental Assessment reports included those existing policies and regulations that were already in place (*the PEI Aquaculture Zoning Policy, the PEI Aquaculture Leasing Policy 2000-2001 edition, Introductions and Transfers Policy, NWPA, CWS Policy for the Issuance of Scare Permits for the Aquaculture Industry*), and the newly developed PEI Shellfish Aquaculture Environmental Code of Practice (SAECOP). With these measures in place, it was determined, as required under Section 5 of CEAA, that the leases were not likely to cause significant adverse environmental effects.

The EA's also considered the interactions of sea ducks on the shellfish aquaculture activities and the potential interaction of shellfish aquaculture activities on colonial birds, specifically piping plovers. It was determined that the SAECOP and the monitoring feedback process, as part of the Adaptive Management Process, would be appropriate mitigative vehicles.

The environmental assessment for each bay also included a compliance monitoring and follow-up plan. Compliance monitoring consists of verification of NWPA permit conditions, the monitoring through Introductions and Transfers Regulations, Section 56 of the Fisheries General Regulations, the Canadian Shellfish Sanitation Program, the Potentially Toxic Phytoplankton and Shellfish Biotoxin Monitoring Programs, the PEI Aquaculture Leasing Policy, and the self-audit and independent audits that will be conducted as part of the SAECOP. Although follow-up programs are not a legislated requirement for screenings under CEAA, it was agreed that in this case a follow-up component was required because aquaculture projects involve; 1) new or unproven mitigation measures and 2) some uncertainty about the conclusions. Considerations in the follow-up component included how and by who the information would be used (data management) and what the reporting requirements would be. The follow-up component for this project is a shared responsibility between DFO, the Province of PEI and the PEIAA. DFO (Aquaculture Division) is responsible for an annual underwater video survey of selected benthic habitats in the Bays, and the collection, review and real time entry of Annual Lease Reports into the GIS database. The PEI Department of Fisheries, Aquaculture and Environment are responsible for summarizing the findings of the PEI Estuarine Water Quality Monitoring Program. (This provincial estuary-monitoring program, which began in 1998, is an annual monitoring designed to obtain long-term information on general estuarine trophic conditions in PEI. Three locations representing upper, middle and lower estuary positions in each estuary are sampled once per year during the first two weeks of August. The parameters analyzed include salinity, temperature, depth, conductivity, dissoloved oxygen, chlorophyll a, total nitrogen, and total phosphorous. The early August sampling date is the time of year when water quality problems should be most apparent.) The PEI Aquaculture Alliance is responsible for ensuring growers compliance with the SAECOP. The analysis

of these programs' data will be evaluated on an annual basis through the Adaptive Management Process.

In March 2003 the Aquaculture Division developed a PEI Monitoring and Compliance Work plan for the 2003 field season. This plan is a cooperative effort between the PEI Aquaculture Division and the NWP Branch. The Aquaculture Division is responsible for the collection of data and the NWP Branch is responsible for compliance measures.

## 7.0 SHELLFISH ENVIRONMENTAL ADAPTIVE MANAGEMENT PROCESS

In any environmental assessment, there is some degree of scientific uncertainty. A low degree of uncertainty means there is a high confidence that the conclusions of the environmental assessment are accurate and the adverse environmental effects are not likely. The PEI Shellfish Aquaculture Environmental Adaptive Management Process was developed to mitigate against the uncertain likelihood of significant adverse effects over time. The Adaptive Management Process allows adjustments to be made if science identifies an issue. It is based on the principle that if future monitoring or scientific research shows an effect; there will be a mechanism by which DFO will require a resource manager or proponent to conduct mitigation. DFO as the Responsible Authority (RA) for the project must ensure follow-up and monitoring are carried out and reported on.

The Environmental Adaptive Management Process for the PEI aquaculture site review established a framework by which to ensure ecosystem integrity and promote sustainable aquaculture. Ongoing and directed monitoring and research provides the information to determine the direction of required management actions. For the Environmental Assessments of lease sites on PEI, the Adaptive Management Process identified stakeholders as DFO, the PEI Department of Fisheries, Aquaculture and Environment, and the PEI Aquaculture Alliance. (Appendix 8 contains the Process Charter between DFO, the PEI Department of Fisheries, Aquaculture and Environment and the PEI Aquaculture Alliance.) This process will, on an annual basis, review and summarize the appropriate research and environmental effects monitoring programs to provide the strategic direction that the stakeholders involved in this process must implement to promote an environmentally sustainable industry.

On May 21, 2002 the first meeting of the Adaptive Management Process Networking group was held. Those in attendance were DFO (Area Director's Office, Habitat – Charlottetown and Region, Aquaculture Division, Science – Gulf and Maritimes), PWGSC, EC, Province of PEI, and the PEIAA. The meeting was held to provide an overview of the set-up and operation of the Adaptive Management Process and to review the monitoring and research-monitoring programs to ensure long-term ecosystem based management.

The first full process meeting of the PEI Shellfish Environmental Adaptive Management (SEAM) Committee was held in January 2003. A Chairperson was appointed and those outstanding issues that had to be addressed by the SEAM process were identified. The outstanding issues identified at the meeting were:

- Development of a compliance toolbox
- Development of ecosystem thresholds
- Collection of underwater video of aquaculture lease sites
- Consolidation of research programs being conducted on aquaculture sites on PEI
- Consolidation of issues identified in CEAA Screenings
- Assessing shellfish grower compliance with the SAECOP
- Grower compliance with the Tracadie Bay Management Plan (see section 8).

To date the SEAM committee has held four meetings and will continue to meet at least once a year.

## 8.0 TRACADIE BAY MANAGEMENT PLAN

The Tracadie Bay CEAA Screening represented a unique situation in context of the other bay assessments. The information gathered through the PEIF process and written public environmental issues and concerns led the assessment team to conclude that Tracadie Bay was exhibiting conditions that raised concerns about shellfish aquaculture sustainability. As such, DFO Habitat Management supported a bay management plan as part of the mitigation measures of the CEAA assessment.

### 8.1 Management Plan Development

Growers in Tracadie Bay recognized the need for sustainable growing practices to respect the integrity of Tracadie and Winter Bays and to ensure the long-term viability of the mussel aquaculture industry in this area. In February 2002, growers in Tracadie Bay hired a facilitator to develop the first management plan for Tracadie Bay, and growers unanimously agreed to develop and implement the *Mussel Aquaculture Management Plan for Tracadie Bay*. By signing on to the Plan, growers in the Bay unanimously agreed and committed:

- to implement a maximum mussel density in Tracadie Bay of 500 socks per acre (on an acre by acre basis) at any given time, starting with the acreage that is socked in the fall 2002 socking season;
- that the acreage growers deem unusable for mussel grow-out (i.e. too shallow) will be used for other purposes (i.e. seed lines) but that the socks that could have been placed on this acreage are not transferable to other Tracadie or Winter Bay acreage in their possession;

- to participate in the various monitoring initiatives and fully co-operate in the process to achieve the common goal of a healthy Bay and a sustainable Industry.

### 8.2 Tracadie Bay Management Plan Monitoring Protocol

As part of the commitment to ensure grower co-operation with the Mussel Aquaculture Management Plan for Tracadie Bay, the Habitat Branch of DFO, in consultation with the Province of PEI and the Aquaculture Industry agreed to develop a protocol to outline the methods by which monitoring would occur. A meeting was held in June 2002 with the growers in Tracadie Bay to review the plan, and while support for the monitoring plan was not unanimous, the plan was accepted with few changes.

Letters, providing growers with an update on the progress on the management plan and monitoring program, were sent to all growers in Tracadie Bay in February 2003. In March 2003, the Aquaculture Division developed a plan to monitor grower compliance with the Tracadie Bay Management Plan.

Surface and/or off-bottom growers in Tracadie Bay also agreed to participate in the ACRDP (Aquaculture Collaborative Research and Development Program 2002-2004) to develop and evaluate standardized monitoring and data acquisition systems for the management of shellfish aquaculture. This project's objectives include developing a system for the monitoring of natural growth rates and physiological conditions, development of a data acquisition system (i.e. log book) at the producer's level, correlate husbandry practices with shellfish productivity using the data collected and to conduct specific field experiments to test suspected cause and effect relationships between culture techniques, production yields and shellfish health.

## 9.0 ISSUANCE OF NWPA APPROVAL DOCUMENTS

When the Environmental Assessment reports for each of the 15 bays were being finalized, preparations were made to complete the sign-off and issue NWPA and CEAA documents. It was agreed that documents would be issued over a three day period the week of February 11$^{th}$ ,2002 and that growers would be able to sign on to the SAECOP, sign the CEAA screening document agreeing to the identified mitigation measures, and sign for and review the NWPA approval package in a one – stop – shopping approach.

A schedule was developed for the three-day session and all growers with surface and/or off-bottom aquaculture sites were contacted by telephone and advised when and where their permits would be issued. By February 14, 2002, NWPA approval and CEAA screening documents were reviewed and or issued for all sites, except for those in Tracadie and Winter Bay. NWPA approval documents were issued for growers in Tracadie and Winter Bay after February 19$^{th}$, 2002,

when the growers agreed to the *Mussel Aquaculture Management Plan for Tracadie Bay.*

## 10.0 HABITAT REFERRAL TRACKING SYSTEM (HRTS) DATA ENTRY

CEAA screening information was placed in real time into the DFO Habitat Referral Tracking System (HRTS) database and was placed on the Federal Environmental Assessment Index (FEAI). FEAI allows the public the opportunity to access information on each project and serves as the public registry for environmental assessments per the requirement of CEAA. The HRTS is maintained by DFO and the registry for this project was established at the Habitat Management Division of the DFO office in Charlottetown. The following is a list of the records entered into HRTS:

- Notification by proponent that application sent to NWP
- FCR request to agencies (1 for each agency)
- Site map and list of proponents
- Response from each agency with respect to FCR's
- Aerial photos of spatial coverage and location of project
- Map of co-ordinates encompassing sites
- MOU to Habitat Management from NWP (request for screening)
- Site development plan (one entry for each lease in that bay)
- Project and environmental information (one entry for each lease in that bay)
- Letters of concern
- Response to letters of concern
- Updated buoy marking plan (one entry for each lease in that bay)
- CEAA screening report for bay
- Notification to each agency that screening determination completed with non-significant residual effects (one for each agency)
- NWPA, Section 6(4) approval for each lease

All EA screenings are public documents and copies are kept at DFO-Ottawa (OSA), DFO-PEI, DFO-Gulf, DFO-Maritimes, University of Prince Edward Island Library, PEI Department of Fisheries, Aquaculture and Environment (Aquaculture Division), and the PEI Aquaculture Alliance.

## 11.0 CONCLUSIONS AND LESSONS LEARNED

In February 2002, NWPA approval documents were issued to the 426 existing surface and/or off-bottom aquaculture sites on Prince Edward Island. (A timeline summary of all steps in the process is found in Appendix 9.) Co-operation and communication throughout the process was key. Both within DFO and among the Province, the Aquaculture Alliance or other government departments (to develop operational plans and marking strategies, complaint letter review panel etc.), all parties worked together to ensure that the process continued to

progress, that appropriate regulatory processes were followed and in the end existing shellfish leases on PEI received their NWPA/CEAA approval.

### 11.1 Issues Arising Through the Process

The process of authorizing the existing shellfish leases on PEI required resources from regulators and the industry to complete. In discussions with the industry it was felt that the process could have been modified to lessen the level of effort by all parties. In conclusion, the regulatory processes were in place and in order to have a defensible conclusion these processes needed to be completed.

Requesting written public input through the advertisement process was a pathway that was required under the NWP process and chosen under the CEAA process. The request for public input under the CEAA process was not an obligation but was chosen to add credibility to the process and ensure the Minister had made sufficient actions to gauge public concern. A number of the written responses from the public were problematic as they contained issues outside of the scope of the navigational or environmental concerns.

While the existing PEI Aquaculture Zoning System was and is an effective planning and management tool the classifications and boundaries were shown in the CEAA assessments to require incremental updates. These updates involved updating the data on which the classifications were based (bottom and off bottom oysters) and taking into consideration the changes in coastal development of the areas.

### 11.2 Solutions and Innovations

The creation of Action/Operational Plans and Program Charters with well defined leads, timelines, roles and responsibilities and deliverables allowed all parties involved in the process to understand their roles and what was expected of them in the process.

Regular meetings and constant communications were essential at keeping all parties involved in the process as well as being a venue for receiving input.

The PEI Shellfish Environmental Adaptive Management Process (SEAM) established in December 2001 is another reason the process succeeded. The SEAM provides a framework by which to ensure ecosystem integrity and promote sustainable shellfish aquaculture. The process ensures that if future monitoring or scientific research shows an effect; there will be a mechanism by which DFO will require a resource manager or proponent to conduct mitigation.

There was a good exchange of information with the PEI First Nations and this was instrumental in the process proceeding. Communication between DFO and

the First Nations on Prince Edward Island continues through the Department's Aboriginal Co-odinator.

There is now a pathway for future applications to be reviewed under NWPA and CEAA. The project environmental information forms (PEIF) need to be modified, environmental monitoring must continue, and a comprehensive review of the GIS data available and a consultation with appropriate regulators must take place. The future environmental management process will benefit greatly from the input of several more layers (from information generated as part of the CEAA) into the GIS (CSSP marginal water quality areas, PEI estuary water sampling sites, CFIA toxic algae sample sites, waterfowl observations sites, rare and endangered species locations, the bottom type and shellfish mapping from 1971 to 74). With these layers of historic and ongoing data, a prospective lease applicant and manager could identify on a map or series of maps the potential interactions that could occur on the lease.

## REFERENCES

DFO. 2002. Environmental assessment report for water column aquaculture of mussels, oysters and off-bottom aquaculture of oysters in New London Bay. Fisheries and Oceans Canada.

Prince Edward Island Aquaculture Alliance. 2002. Prince Edward Island shellfish aquaculture environmental policy. Prepared by Jacques Whitford Environment Limited for the PEI Aquaculture Alliance.

## APPENDIX 1. TERMS OF REFERENCE FOR WESC

### PEI WATERWAYS EVALUATION STEERING COMMITTEE

***Terms of Reference***

Draft 2– October 21, 1999

Objectives and Principles

To provide long-term stability and economic security for the aquaculture industry on PEI.

To establish and implement a risk-based strategy to mitigate boating safety concerns by implementing an area specific interim lease marking (navigational and informational buoys) scheme for aquaculture sites in PEI waterways. Evaluate environmental issues relative to the aquaculture industry on PEI.

To achieve an optimum balance between the following two issues: meeting the legislative requirements and meeting the Department's stated objective of recognizing the historical context and state of development of the industry and, accordingly, finding the least threatening and costly approach to resolve the issue.

To achieve a high degree of integration of DFO's and other groups and agencies activities relative to the project.

Membership

Committee reporting to: H.H.(Hank) Scarth, DFO Area Director, PEI

| | |
|---|---|
| DFO- Aquaculture Leasing (Chair) | Dale Small |
| PEI Fisheries & Tourism | Richard Gallant |
| PEI Aquaculture Alliance | Crystal McDonald |
| PEI Mussel Growers | Stephen Stewart |
| PEI Oyster Growers | unnamed |
| DFO – Habitat | Lea Murphy |
| DFO - Aids to Navigation | Bev Cleaveland and/or Claire MacLaren |
| DFO – NWP | Mansel Turner |
| DFO – C & P | unnamed |
| PWGSC | Don Maynard |
| Secretariat | Lori Cuddy |

The Team may call on expert support as required (eg: legal, enforcement, technical)

Operating Guidelines

The lead for the project is the Area Director-DSO for the PEI Area; who has delegated the functional leadership role to the Chief, Aquaculture Division who shall:

call and chair meetings-conference calls as required
report to senior management relative to activities, issues and opportunities
work with members and senior management to resolve disagreements in approaches that may evolve

Each member

is equal at the table
has a role (recognizing individual reporting lines and responsibilities) in developing and maintaining the integrated team approach
brings lead expertise and input from their respective fields
interacts with line management to inform, seek direction and confirm support for project implementation
is free to and encouraged to comment on all activities related to the project

A quorum will include at least two industry representatives.
An "Action Items" table will be prepared and circulated after each meeting.
Members are to alert the chair if they cannot meet established deadlines.

Administrative and policy/procedural support will be provided by the PEI Area office.

There is no specific budget for the Steering Committee. Each member is responsible for travel and related expenses. Meetings will be set to minimize the requirement for evening meetings.

## APPENDIX 2. PHASE I, PHASE II OF PEI AQUACULTURE OPERATIONAL PLAN

### PEI AQUACULTURE
### OPERATIONAL PLAN - PHASE I

Draft 4 January 10, 2000

**Objective: Establish a risk based strategy to mitigate boating safety concerns and provide long term stability and security for the aquaculture industry for PEI.**

This plan proposes a multi year initiative to address NWPA concern on approximately 426 surface mussel and off bottom oyster culture sites on PEI. It will be based on a team approach led by the DFO Area Manager for PEI. Team members include the PEI DFO Aquaculture Division (ALD), NWP, Nav. Aids, DFO Oceans/Habitat, PEI Dept. of Fisheries and Tourism (PEIDFT), and the PEI Aquaculture Alliance (PEIAA). This approach will build on the partnering agreement between DFO, the Province of PEI and the Aquaculture Industry and will be a cost effective, integrated approach considering the history of industry development and concerns of all stakeholders. Work will be conducted on a bay-by-bay basis.

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| Scoping Phase | The scoping phase will be a period of data analysis and gap analysis to prepare for a determination of the requirements to address the NWP and CEAA. | ALD | CCG, Oceans, ALD, Province | August 99-September 2000 | CEAA proposal from PWGSC |
| Establish committees to initiate consultations | Establish a Waterways evaluation committee to lead the consultation process. Establish a lease marking sub-committee to lead industry consultations. Establish an environmental sub-committee to educate industry and scope out environmental issues | ALD | ALD, Province, Industry, CCG, Oceans | Completed | PEIWEC functions as steering committee for sub-committees (2 meetings) marking committee (10 meetings) environmental committee(3 meetings) |
| Develop buoy standard and marking standard | Chose buoy size, colour, and design to standardize aquaculture marking across Province. Establish standards for buoy spacing, primary and secondary navigation routes. | Industry | Industry, Province, ALD,CCG | Completed | Industry has voluntarily developed standards that meet or exceed CCG requirements. |
| Interim marking plan for 426 aquaculture sites | Meetings with industry on a waterways basis to determine an interim lease marking plan to address safety and navigational concerns, and make adjustments as required. | Industry | ALD, CCG, Industry, Province | November 1999-Febuary 2000 | Meetings held in 50% of areas. Excellent progress, cooperation |
| Implementation of marking plan | Acquire and deploy the buoys required to mark all leases using the water column on PEI as determined by the waterways meetings. | Industry | Industry<br>Assisted/advised by ALD, CCG, Province | February 2000-May 2000 | Industry discussing bulk purchase of standardized buoys-deployment plan. |
| Communications and stakeholder consultation | Informal contact by industry with stakeholders to assess reaction to new marking scheme. ( formal consultations may follow depending on final determination of next phase)Information signage at wharves, slipways. Positive media attention to lease improvements, Federal/Provincial/industry cooperation. | Industry | Industry, Province | May 2000-November 2000. | Industry will use this time to allow other stakeholders to experience improvements in waterways. Exploring Code of practice for leases. |
| Waterway reviews | DFO monitoring and assistance to marking plan implementation, familiarization tours for NWP. | ALD | Industry, ALD | May 2000-October 2000 | ALD and CCG staff will assist industry in deployment of buoys and fine tuning of site locations |
| Finalize DFO approach to | Industry and Province will lobby DFO Minister for exemption under NWPA and subsequent CEAA | PEI Area | CCG, Oceans, ALD | Ongoing | Industry and Province will contend |

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| Assessment phase | trigger.<br>DFO officials will recommend course of action | Manager | | | that sites no longer present a substantial interference to navigation |
| Communication of Minister's decision to industry | Official notification of DFO decision re formal NWPA process or exemption | PEI Area Manager | DFO | January 2001 | Industry, Province will assess response to Minister's decision and determine further actions if required. |
| | | | | | |
| Process, issue documentation for aquaculture sites-NWPA, CEAA, Lease contracts | As per direction from the Minister, assess and begin issuance of documentation to provide for requirements of legislation and/or initiate formal processes. | PEI Area Manager | CCG, Oceans, ALD | January 2001-November 2001 | Industry and Province will strongly oppose a formal, public process if one is required by DFO/CCG. Issuance of documentation will provide security and stability to industry. |
| Compliance and Monitoring | Through the Co-managed Leasing Program, establish an ongoing monitoring and compliance regime for all waterways | ALD | ALD | May 2000---- | |

# PEI AQUACULTURE
## OPERATIONAL PLAN – Phase II

**Draft 1** February 20, 2001

**Objective: Establish a strategy to meet the legal requirements of NWPA and CEAA and provide long term stability and security for the aquaculture industry for PEI .**

This plan is based on the following principles:

- DFO will waive a requirement for all existing[1] surface aquaculture sites to formally apply for NWPA assessment.
- The PEI Aquaculture Alliance will provide full support to DFO's efforts to conduct formal assessments under the NWPA and subsequent CEAA model class screening.
- DFO will recognize the history of aquaculture development on PEI including the zoning system, lease marking scheme and codes of practice[2] and will demonstrate good faith in its efforts to minimize the impacts and costs to the industry while respecting the legal requirements of the NWPA and CEAA.
- CCG will locate a NWP officer on a full time basis at DFO Charlottetown to facilitate the plan.

| [redacted] | [redacted] | [redacted] | [redacted] | [redacted] | [redacted] |
|---|---|---|---|---|---|
| Conduct a pre-final[3] review and adjustment of all surface culture lease boundaries | A panel consisting of one rep from each of: CCG, Habitat, Province of PEI and DFO Aquaculture will, on a bay-by-bay basis, meet with each leaseholder and finalize the acreage and corner coordinates for each site. The GIS will then be revised to reflect the new information | ALD[4] | CCG, Habitat, ALD, Province | March 19-April 12, 2001 | The PEI Leasing Management Board will provide guidance to the panel on the principles for the site adjustment process. |
| Commence the formal NWPA assessment process for all existing sites | A joint NWPA, CEAA advertisement will be placed in two local newspapers and the Royal Gazette for all surface aquaculture sites on PEI. DFO Aquaculture will be the repository for information as requested by interested parties. | CCG | CCG, Habitat, Aquaculture Alliance, PWGSC[5] | April 17th, 2001 | ALD, PWGSC and NWP will assist and provide information to interested parties. |
| Final review and adjustment to all sites | Based on the outcome of the public comment period, the review panel will finalize site boundaries | CCG | Industry, Province, ALD, CCG, Habitat, PWGSC | May 17-May 31, 2001 | All reasonable efforts will be made to minimize disruption and compensate for any net loss in acreage. |
| Issuance of documents | Site operators will receive and sign off on revised lease contracts, NWPA approvals, and CEAA screening documents. | ALD | ALD, CCG, Habitat | May 31-July 15, 2001 | Lease contracts will be issued for up to a twenty-year period depending on |

[1] all new applications will require an application as per the Referral Committee requirements.
[2] in development
[3] All adjustments will be subject to one final review after the 30-day comment period as required under the NWPA.
[4] DFO Aquaculture Division, Charlottetown
[5] Don Maynard, as contracted with Public Works, Government Services Canada.

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| | | | | | individual circumstances for each site. |
| Processing of new site applications | An integrated, "one stop shopping" approach will commence to accept and process new applications | ALD | Referral committee | May 1, 2001-ongoing | Site assessments will begin at "ice out" and reviews will be conducted as time permits. |
| Monitoring | Ongoing, routine monitoring and compliance checks will be conducted. | ALD | ALD, CCG, Habitat, Aquaculture Alliance | May 2001-ongoing | Aquaculture Alliance will continue to promote good site management practices and DFO will provide enforcement effort. |

## APPENDIX 3. PEI AQUACULTURE SITE MARKING POLICY

**Prince Edward Island Aquaculture Site Marking Policy**
As of September 2001

During the winter of 1999 - 2000 the Prince Edward Island Aquaculture Alliance in cooperation with the PEI Department of Fisheries, Aquaculture and Environment and Fisheries and Oceans Canada (DFO) met with water column and off-bottom leaseholders to develop a marking scheme that would ensure the navigational safety of all stakeholders. The development of the marking policy took into account the current boating activity (i.e. aquaculture, fisheries, recreational) in each of nineteen bays/tributaries around PEI. As a result the marking requirements detailed below were agreed upon and the industry has invested over a quarter of a million dollars to implement this new policy.

***Lease Corners & Sides Abutting Navigational Corridors***

Island water column and off-bottom leases abutting a navigational corridor will be marked with red and green colour-moulded 8" in diameter spar buoys.

The spar buoy is to be marked with "PRIV" and the lease number(s) in white.

A two inch (2") wide strip of retro-reflective material of the same colour (i.e. red, green) will be applied to the diameter of the spar buoy approximately 6 - 8 inches from the top.

The maximum distance between the spar buoys will be 450 metres.

Intermediate markers will be 16" diameter colour moulded red and green balls.

Intermediate markers will be placed a maximum of 100 metres apart between the spars.

No gear (i.e. scopes, screw-in anchors) will be allowed in the navigational corridor.

***Lease Corners & Sides <u>Not</u> Abutting A Navigational Corridor***

Where water depth will allow Island water column and off-bottom leases (not abutting a navigational corridor) will be marked with a minimum 16" diameter and 36" high (24" above water level) moulded cautionary yellow buoy or the 8" diameter cautionary yellow spar buoy. Anyone using a "home-made" plastic pipe or "can" type buoys must use the cautionary yellow colour CGSB Number 505-108. (Note: There will be a five year phase-in period to conform to the 8" diameter cautionary yellow spar.)

The buoy is to be marked with a black "PRIV" and lease number.

A two inch (2") wide strip of retro-reflective material of the same colour (i.e. yellow) will be applied to the diameter of the spar buoy approximately 6 - 8 inches from the top.

The maximum distance between the spar buoys will be 450 metres.

Where water depth will not support a spar buoy the corners will be marked with a colour moulded precautionary yellow intermediate buoy with "PRIV" and the lease number applied in black.

Intermediate markers will be 16" diameter colour moulded cautionary yellow balls.

Intermediate markers will be placed a maximum of 100 metres apart between the spars.

***Local Access Corridors Between Leases***

Local access corridors that are provided between leases for local boat traffic will use a colour moulded cautionary yellow 16" ball.

Maximum spacing of the balls will be 100 metres.

One corner at each end of the local access corridor will be marked with a yellow, red or green spar as applicable (i.e. where the local access corridor merges with a navigational corridor a red or green spar will be placed on one side of the corridor). Where water depth is not sufficient to float a spar a 16" ball of the appropriate colour will be used.

Minimum corridor width of 20 metres.

Gear (i.e. scopes, anchors) must be sufficiently sunken to allow safe navigation.

***General Information***

Lease corners and the periphery of the lease abutting on the corridor must be marked with the red/green buoys. Lease corners and those sides not abutting the navigational corridor will be marked with cautionary yellow buoys. If two leases share a common corner only one buoy is required at the corner (with both lease numbers displayed).

In those areas where lease perimeters abut no intermediate marking is required for the interior perimeter.

Off-bottom oyster leases using the table method of culturing will mark as per the

standard but will also mark the perimeter of the gear on the lease with a cautionary yellow tear-drop or plug buoy.

***Deployment Timeframe***

Buoys will be in the water two weeks after ice out or no later than May 15th.

Buoys will be removed from the water at the earliest by November 15th or by such date as agreed to by industry in consultation with DFO (including the Canadian Coast Guard).

Notice will be given to mariners via the 1-800 Coast Guard line when buoys are adrift or being withdrawn.

When structures/obstructions are removed from the water, buoys can be removed regardless of date.

*Note: figures are in development and will be included in the final version.*

APPENDIX 4. SITE ADJUSTMENT GUIDELINES

## SITE ADJUSTMENT PRINCIPLES AND GUIDELINES
**Presented to the PEI Leasing Management Board**
**March 19, 2001**

### Background

There is currently a draft plan being reviewed to address the NWP/CEAA concerns for the approximately 426 existing water column aquaculture sites in PEI. This plan recognizes the potential need for site adjustments and/or realignments (to ensure that where leaseholders are located are where they should be as per the GIS Aquaculture Division map information) to prepare for the NWPA/CEAA review process. In response to the directive from the PEI Leasing Management Board, the PEI Leasing Referral Committee was tasked with drafting principles to guide this site adjustment process. The Referral Committee met on two occasions to discuss the issue and propose the following principles and guidelines be accepted.

### Principles

1. **Boater safety and navigation are paramount.**

2. **Every attempt will be made to minimize disruption to the existing gear layout for the greater majority of producers and to the Industry carrying on its day to day business.**

3. **This is not an exercise to significantly expand or reduce existing lease acreage.**

4. **This exercise is based on the gear layout information collected from the summer and fall of 2000, and the general acceptance to mark sites as per the Industry marking standard as developed in the 2000 operational plan.**

### Guidelines

- The primary objective of the review process will be to examine gear outside the lease boundaries, not to examine conflicts between two adjacent leaseholders.
- Aquaculture gear outside lease boundaries jeopardizing primary navigation safety will not be permitted. The inside lease boundaries of a water column mussel lease may require adjustments to allow for navigation around the perimeter of a lease or resolve issues related to riparian rights.

- Any decision regarding site adjustments will consider the gear layout on the area being utilized.
- The Committee will take into account the vessel traffic in the area.
- Any decision regarding a site adjustment will take into consideration the existence of "backlog" applications. Generally, preference will be given to the existing sites to bring resolution to the NWP/CEAA issue.
- Generally, where a leaseholder is occupying additional area and provided other guidelines are met, the Committee may support additional acreage of no more than 10% of the original lease size. However, in cases where adjustments are required to smaller leases, the Committee may support up to 5 acres in additional acreage. *If there is documentation* that the leaseholder was asked to move/remove gear, the documentation will stand and the leaseholder will be required to move gear.
- The committee may examine the holdings of a leaseholder on a multiple estuary basis and generally follow the "no net loss/no net gain" principle, i.e. if there is a small loss in one bay there will be the attempt to make it up in another bay.
- The Committee may take into account the potential future utilization of an area being occupied off a leased site when making decisions.
- Off bottom oyster sites will be reviewed within the context of Provincial Riparian Legislation.
- Appeals arising from any site adjustment will be heard by the Regional Director General, Fisheries & Oceans Canada, who has the final authority.

APPENDIX 5. PROJECT CHARTER FOR CEAA ASSESSMENT

# PROJECT CHARTER

**PEI Shellfish CEAA Screenings for Existing Off Bottom and Water Column Sites Under NWP Review**

**Version 3.0, September 19, 2001**

**Table of Contents**

Project Purpose
Project Scope and Approach
Assumptions and Conditions
Outstanding Risks and Issues
Stakeholder Roles and Responsibilities
Time Plan
Project Cost Estimate
Agreement

## Project Purpose

The purpose of this project is assemble a project team and conduct 15 CEAA screenings covering all existing sites (426 plus) for the PEI bays with existing off bottom and water column shellfish aquaculture sites. PWGSC will lead the project with a DFO Habitat Management Officer(s) working in close collaboration with the Project team to facilitate real time feed back on compilation of the screenings. The objective is to complete the determinations of the 15 CEAA Screenings by end December, 2001.

## Project Scope and Approach

The approach of working towards a goal/timeline using innovation and risk based decisions rather that letting the process controlling the timeline, will be required to conduct the 15 Bay by Bay CEAA screenings. A balance must be achieved to ensure that all advisory groups within DFO participate and that defensible screenings are conducted.

In order to make this project work on time, DFO HMD and science will have to commit to a real time, cooperative approach to address their issues and concerns. In addition, other Departments and stakeholders will have to be consulted within established timelines.

PWGSC will compile a special task team, dedicated to compile the CEAA screening documents, conduct the Federal Coordination Requirements, integrate DFO HMD and science comments and prepare the CEAA determination. The

objective would be to have these CEAA screenings for all existing sites completed as the NWP permits would be ready to be signed off (December 2001). The project team would comprise of a Project Manager ((PWGSC) who would report to the PEI Area Director), Project Assistant, and an Assessment Writer Collaborator (private consultant), Document Compilation Support (private consultant), Shellfish Grower Liaisons ((to work with Shellfish Growers to obtain site specific information) short term secondment of one or two PEI Fisheries, Aquaculture and Environment personnel), Mapping and GIS Support (DFO Aquaculture Division). The full time members of this task team would be the Project Manager (PWGSC) and the Project Assistant and would be at the PEI PWGSC office.

**Assumptions and Conditions**

Project Team

-PWGSC project team will lead the preparation of the 15 screenings with a dedicated HMD Assessment Officer(s) (yet to be assigned) to provide real time advice on acceptability, and to have a knowledge of the contents of each screening so as they can co-sign with the Project Manager on the determination.
-The Project Team will liaise with the site lessee to collect site specific information, communicate required mitigation measures and enable sign off on completed screenings.
-Project Team will re-establish Waterways, Environmental Committee to act as communication/discussion forum for the upcoming CEAA process.
-The Project Team will facilitate a multi-stakeholder meeting to determine the acceptable level of Follow-up monitoring as the issue was raised in the review comments from HMD and science provided on August 3, 2001 of the "Water Column Aquaculture of Mussels, Oysters and Off Bottom Aquaculture of Oysters in Prince Edward Island dated March 31, 2001". The scope of follow-up monitoring should be reached by consensus by all stakeholders.
-The Project Team will produce a record of all meetings conducted for this project.
-The Project Team will compile and print five copies of each screening and produce a master digital copy (Microsoft Word and all figures in original format) for DFO.

Screening Trigger

-The CEAA trigger for these screenings will be the regulatory requirements under CEAA with the issuing of an NWP permit. As all of these sites are existing, authorizations under section 35.2 would not likely be issued. Should it be found that a proponent is carrying out activities that harmfully alter, disrupt, or destroy fish habitat, DFO will consider appropriate action. It is projected that any activities that harmfully alter, disrupt, or destroy fish habitat would have practices that are well outside the accepted norm of conducting the aquaculture activity (i.e. dredging out the area under the lease to deepen the water depth) and with out prior authorization.

Internal DFO Consultations and Review

-The PEI Area Director will immediately assign a DFO First Nations Liaison Group person to conduct the consultation of the PEI First Nation Groups, to determine traditional use of the aquaculture areas. PWGSC Project Team, in consultation with CEAA will provide DFO with appropriate background on these types of consultations. The Area Director will prepare a contingency for requests arising from the First Nations.

-It is assumed that the Project Team will have full access to all DFO personnel (to gain clarification and opinions) to expedite the compilation of this screening.

-Where required the bay screenings will be reviewed within HMD and science, using a focus group approach.

Federal Coordination Requirements

-The Project Team will be responsible for all FCR notices and interaction with potential authorities and keep HMD apprised.

-All Federal Authorities with specialist information will be asked (by the Project Team) to provide their expert advice in a streamlined focus group format.

Screenings Content

-Each bay screening will be based on the contents of the "Water Column Aquaculture of Mussels, Oysters and Off Bottom Aquaculture of Oysters in Prince Edward Island dated March 31, 2001" minus the sections in the document pertaining to existing applications. The principle review comments from HMD and science are considered to be those provided on August 3, 2001.

-The screenings will be conducted in accordance with the "Aquaculture Site Referral Process-Interim Operational Policy Guidelines (Feb. 12 2001)".

-The screenings will be conducted with the information collected from the site lessee (streamlined version of the Form A and B from "Water Column Aquaculture of Mussels, Oysters and Off Bottom Aquaculture of Oysters in Prince Edward Island dated March 31, 2001"). A site visit may be conducted as required but no other foreseeable investigation is projected.

Public Input

-All comments of an environmental nature received through the NWP advertisement process or otherwise, will have to be provided in written format and where appropriate addressed in the screening. The scope of this Charter limits this project to written comments.

-The Project Team will provide written response to each written environmental comment from the public; HMD will collaborate with the Project Team to draft the response. The response to the public will be sent from the Area Directors Office.

Contributions from DFO Groups

-The PEI Area Director will coordinate (with Fisheries Management) the resolving of any issues that may arise due to conflicts with aquaculture and commercial fisheries (it is projected that the PEI Aquaculture Zoning System is a mitigating factor for this issue).

-NWP assessment group will send on a weekly basis, the environmental comments received from the public to the Project Team, who will in turn provide a copy to the dedicated HMD Assessment Officer.
-DFO science and HMD will provide any results (preliminary or draft) of ongoing research or monitoring programs on PEI shellfish aquaculture to the Project Team, so as it can be considered in the screening.
-It is assumed that the conditions of permit that NWP will be issuing for each site will mitigate any issues of navigation.
-DFO PEI Aquaculture Division to provide GIS support to compile screenings (including individual site information maps). The Aquaculture Division will also provide support to conduct mail outs as required.
-The dedicated HMD Assessment Officer will provide day to day verbal comments but written directions to the Project Team to modify the contents of the screenings, if the scope exceeds the issues covered under the "Assumptions and Conditions" section of this Charter (i.e. the addition of VEC's, changing boundaries). This will provide accountability for all parties.

Other Contributions
-PWGSC Project Team will work with the Aquaculture Alliance to provide comments for the development and implementation of their Environmental Code of Practice.
-PWGSC Project Team will procure the services of PEI Dept. of Fisheries, Aquaculture and Environment personnel to act as Shellfish Grower Liaisons and collaborate with the department to compile the screenings.

Sign off on the Determination
-The determination page will be compiled as part of the screening document. It is projected that both a Project Team member and HMD will sign the document and the PEI Area Director will consider and approve the screening document, after proponents have signed the mitigation and monitoring measures.

**Outstanding Risks and Issues**

Risks and issues have been identified for conducting the CEAA screenings for the existing off bottom and water column shellfish aquaculture sites.

| Risk/ Issue | Risk/Issue Statement and Impact | Context/Background |
|---|---|---|
| Consultation with First Nations cannot be concluded on time | Not advisable to finalize CEAA screening until adequate consultation with First Nations are complete. | Consultations to commence immediately to provide as much time to all parties to provide input. |
| Scope and responsibility of additional follow- | There is not a consensus as to the scope and who will be responsible to conduct follow- | Conduct a multi-stake holder (see Stakeholder Roles and Responsibilities) |

| | | |
|---|---|---|
| up monitoring, as identified by HMD | up monitoring requested by HMD. | meeting, as early in the process as possible to clearly identify wants and needs. |
| High number of written comments from public | High number of comments to provide responses will take additional time not budgeted or planned. | Application of additional resources if required. |
| Prolonged PSAC labour disruption | For those components of the assessment that are contributions from other DFO groups, prolonged labour outages will result in delays in all aspects of the project. | Application of additional resources if required. |

**Stakeholder Roles and Responsibilities**

PWGSC Environmental Services-
-Leads the CEAA screening preparation and consensus building with DFO and other regulators,
-Prepares the 15 screening documents covering all existing sites (426plus), with HMD providing real time advice on acceptability and providing input for problem solving on these issues.
-Project Team obtains from each site lessee site specific information.
-Lead and participate in multi-stakeholder (DFO, Environment Canada, PEI, PEI Aquaculture Alliance) meetings to establish consensus on follow-up monitoring.

DFO Habitat Management Division-
- A dedicated HMD Assessment Officer(s) assigned with Project Team, to provide real time advice on acceptability, and to have knowledge of the contents of each screening so as they can co-sign the determination portion of the screening document along with the Project Manager.
-Participate in multi-stakeholder meetings to establish consensus on follow-up monitoring.
-Assist Project Team in responding to written environmental concerns submitted by the public.

DFO Marine Environmental science-
-Participate in focus group reviews of screening documents as required. Provide clarifications and opinions.
-Participate in multi-stakeholder meetings to establish consensus on follow-up monitoring.
-There will be joint responsibility between Maritimes and Gulf Science to provide input for this project.

DFO PEI Aquaculture Division-
-Provide GIS support to compile screenings (including individual site information maps). The Aquaculture Division will also provide support to conduct mail outs as required.
-Participate in multi-stakeholder meetings to establish consensus on follow-up monitoring.

DFO Office of the PEI Area Director-
- The PEI Area Director will coordinate (with Fisheries Management) potential fisheries issues and the consultations with First Nations (with support from Project Team).
-Approves contents and determination of screening documents.
-All communications on this project will be handled through the PEI Area Directors Office.

DFO Office of Sustainable Aquaculture-
-Provides coordination of each DFO group for the project and arbitrates when required.

DFO Navigable Waters Protection-
-Provides on a timely basis, the written comments from the public advertisement to the project team.
-All environmental comments will go to the Project Team.
-Communicates to the Project Team any outstanding issues of navigation as part of their site reviews.

**Time Plan**
**September, 2001**
-Project Manager to develop, circulate and receive sign off on a Project Charter/ that clearly states each person/group, internal/external DFO role in the process, schedule. This is a keystone step and until this is signed off it would not be recommend to proceed with the NWP advertisement.
-Re-establish Waterways, Environmental Committee to act as communication/discussion forum for the upcoming CEAA process.
-Commence two stage revision of the existing, "Water Column Aquaculture of Mussels, Oysters and Off Bottom Aquaculture of Oysters in Prince Edward Island dated March 31, 2001" one breaking the document into Bay by Bay segments and revising these documents as per HMD and Science Branch comments of August 3, 2001.
-Provide assistance in reviewing and finalizing the Codes of Practice to ensure to the extent possible issues and concerns are addressed.
-Commence working with DFO First Nations Liaison group to consult First Nation Groups on PEI.

**October, 2001**
-Shellfish Grower Liaisons contacting each site grower to obtain site specific environmental data in a streamlined Form A and B from "Water Column

Aquaculture of Mussels, Oysters and Off Bottom Aquaculture of Oysters in Prince Edward Island dated March 31, 2001".
-Hold multi-stakeholder meeting on follow-up monitoring issue.
-Continue two stage revision of the existing Document, one breaking the document into Bay by Bay segments and revising these documents as per HMD and Science Branch comments, integrating shellfish grower information on each site.
- Hold Waterways, Environmental Committee meeting.

**November, 2001**
-Shellfish Grower Liaisons contacting each site grower to obtain site specific environmental data.
-Continue two stage revision of the existing Document, one breaking the document into Bay by Bay segments and revising these documents as per HMD and Science Branch comments, integrating shellfish grower information on each site.
-Review and address the comments from the public advertisement.
- Hold Waterways, Environmental Committee meeting.

**December, 2001**
-On bay by bay basis finalize, compile and get sign off on CEAA screenings.
-Work with all groups to ensure that the mitigation measures and follow-up resulting from the CEAA screenings are understood by all parties.
-Work with DFO Aquaculture Division to set the pathway for future adaptive management program.
-Enter information into HRTS database (PEI Area Responsibility) for each of the screenings (sites).

**January, 2001 (first two weeks)**
-Archive all material and documents with DFO.
-Disband study team.

## Project Cost Estimate

The project cost estimate is included in Annex A. Once there is an agreement in principal on the Charter, a formal proposal and Standard Service Agreement will be drawn up.

## Agreement

We the undersigned, hereby agree to the terms and conditions set out in this Charter. No changes can be made to the Charter without agreement of all parties.

| Stakeholder | Print Name | Signature | Date |
|---|---|---|---|
| PWGSC Environmental Services | | | |
| DFO Habitat Management Division | | | |
| DFO Marine Environmental Science | | | |
| DFO PEI Aquaculture Division | | | |
| DFO Office of the PEI Area Director | | | |
| DFO Office of Sustainable Aquaculture | | | |
| DFO Navigable Waters Protection | | | |

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PROJECT ENVIRONMENTAL INFORMATION FORM

# Project and Environmental Information for Existing Sites for Water Column Mussel, Oyster, and Off Bottom Oyster Aquaculture on Prince Edward Island

# Project Information

1 - Please provide the following contact information for the project:

- Lease number
- Location
- Species (If more than one, please indicate other species)
- Coordinates of lease
- Aquaculture Zoning Designation
- Name and address of company
- Name of principal contact person
- Telephone and fax numbers

Annual Lease Report Submitted ☐ Yes ☐ No

## Zoning Information

2 - The lease site location and culture method conforms with the *PEI Aquaculture Zoning System* classification for this area;

☐ Yes, ☐ No.

If no, describe how the DFO Aquaculture Leasing Division will reconcile the site into the *PEI Aquaculture Zoning System.*

3 - The lease site location is classified under the *Canadian Shellfish Sanitation Program* acceptable for shellfish;

☐ Yes, ☐ No.

If no, describe how the DFO Aquaculture Leasing Division will reconcile the site into the *Canadian Shellfish Sanitation Program* acceptable for shellfish harvest.

4 - The lease site location is within waters monitored for biotoxins by the Canadian Food Inspection Agency;

☐ Yes, ☐ No.

If no, describe how DFO Shellfish Leasing Division will reconcile the site into a program where it would be part of the waters monitored for biotoxins by the Canadian Food Inspection Agency.

5 - Do you conform with the following aspects of the *2000-2001 Edition of the Prince Edward Island Aquaculture Leasing Policy*, and the *Act to Amend the P.E.I. Fisheries Act, Chapter 26, 1999,* the key points of these being (referenced from the policies):

1. The site is marked as outlined in the interim lease marking plan contract and/or the NWP permit (Rights and Obligations and Lease Boundaries).
   ☐ Yes, ☐ No.

2. The lease is operated as per the approved site development plan (if applicable) (Rights and Obligations).
   ☐ Yes, ☐ No.

3. All rentals and fees associated with the lease are paid (Fee Structure).
   ☐ Yes, ☐ No.

4. Operating in a manner that does not cause litter and debris to be found on the shoreline adjacent to sites (Utilization).
   ☐ Yes, ☐ No.

5. An Annual Lease Report is submitted (Utilization).
   ☐ Yes, ☐ No.

6. Actively working on the lease within the last 12 month period (Utilization).
   ☐ Yes, ☐ No.

7. Is recognized under the *Act to Amend the P.E.I. Fisheries Act, Chapter 26, 1999.* (off-bottom oysters)
   ☐ Yes, ☐ No.

## Physical Location

6 - DFO Aquaculture Leasing Division to provide maps (scaled and distance legend) showing the exact location of the aquaculture site, with the following information (photo 1, maps 1 to 5):

### Photo 1

- Aerial photo of site, showing lease boundaries and location of lease within its geographic area.

### Map 1

- Showing area features such as land property outlines, 1997 Forest Outline, roads, lanes
- DFO-SCH wharves
- Classification under Canadian Shellfish Sanitation Program
- PEI Aquaculture Zoning System Classifications
- Adjacent shellfish aquaculture sites and their spatial relationship from the site. Show the location, type of species and actual size of other aquaculture sites in the same embayment.

Map 2
- Latitudinal and longitudinal corner and center co-ordinates of the site in NAD 83

Map 3
- Dimensions of the site

Map 4
- Distance from nearest shoreline (if applicable)

Map 5
- Depth of water on site at mean low tide (If not already detailed on Map 5, please mark in, at a minimum, the depths at the corners of the lease at mean low tide)

7 - Provide the surface area of the lease site: _____

8 - Describe the location of the point of access for the site (i.e. wharf, slipway, beach). Please include the location of any access required and for winter harvesting (indicate on Map 1).

_____

_____

9 -Briefly describe the present use of the shoreline and the land adjacent to the site.

_____

_____

## Design & Operational Plans

**Infrastructure**

10 -What year did suspended or off-bottom shellfish aquaculture commence on this site?

_____

11 - Provide labelled scale drawings of the site in two dimensions (plan view (use Map 6) and cross sectional view, using Figure 1 or 2, as appropriate). Include equipment such as mooring system, anchors, long lines, floats, tables.

_____

_____

12 Describe the anchoring / mooring system (e.g. screwed in, block anchor).

_____

_____

## Method of Culture

Water Column Suspension Culture for mussels and/or oysters

13 - Give the number and dimensions of longlines (Map 6).

14 - Provide information regarding the culture units to be used for growing shellfish. Include a description and the dimensions of gear. For example:

- Culture units (i.e. socks, trays, etc.)
- If trays or bag units, specify dimensions
- If socks, specify the length to be used
- Number of lines on site, length of lines, space between lines (Map 6)
- Specify spacing between units on longlines (Figure 2)

15 - Give the maximum number of units (lines, socks, trays and/or bags) used at any given time as well as the expected number at full site utilization.

Off-Bottom Culture of oysters (structures that rest on the bottom, only)

16 - Describe the technology to be used. Provide the appropriate dimensions of bags, trays, cages or French tables/pods as well as the number of units (Map 6/Figure 1). For example:

- Tray type
- Height of table, frame or trestle from sea bottom
- Tray dimensions

17 - Give the maximum number of tables and units used at any given time, as well as the expected number at full site utilization.

## Production

18 - Attach a copy of the Annual Lease Report for the year previous to this application. This Annual Lease Report is pursuant to Section 5 of your lease agreement. The report specifies the species of shellfish to be raised, including the spat collection technique and location, harvest quantities, shellfish on site, etc.

19 - Describe harvesting procedures of off-bottom culture, and schedule (grow-out time experienced over last year).

### Effects of the Environment on the Site/Operation

20 - Describe when and what damage wind, wave, or ice has caused to this site. Describe any measures taken to minimize this potential damage in the future.

### Ancillary Management

Predator Control

21 - Has this site ever experienced any predation from sea ducks or other marine organisms (starfish, crabs), and if so what was done to deal with it?

### Biological Environment

22 - With the site knowledge acquired over the time the site has been operated, provide a qualitative assessment (Traditional Ecological Knowledge) of bottom type and conditions including shellfish resources and marine plants on the site. Include approximate abundance of each component. Mark in this information on a copy of Map 7. Use the legend for the bottom types and shellfish and drawn in areas on Map 7.

23 - Using Traditional Ecological Knowledge (the Grower's observations), list other fish and crustacean species that may use this area (on or adjacent to the site) as spawning, rearing, or over-wintering habitat.

- Atlantic Mackerel, Smelt, American Eel, American Lobster, Rock Crab, Trout, Winter Flounder, Atlantic Cod, Herring, Atlantic Silverside, Atlantic Salmon, Alewife/Gaspereau, Sculpin.

_____
_____
_____
_____
_____

**Submission of Project Information**

The project information and environmental conditions information is for use in a CEAA assessment.

This form has been completed by Project Team Member _____

# PROCESS CHARTER

**Environmental Adaptive Management Process, PEI Shellfish Off Bottom and Water Column Sites**
**Version 3.5, 2001**

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Purpose
Scope and Approach
Assumptions
Stakeholder Roles and Responsibilities
Agreement

## Purpose

The Environmental Adaptive Management Process objective is to establish a framework by which to ensure ecosystem integrity and promote sustainable shellfish aquaculture. In support of the Environmental Adaptive Management Process there will be the establishment and operation of an adaptive management framework (where ongoing and directed monitoring and research provides the information for direction of required management actions) with the Core Process Stakeholders of DFO, PEI Aquaculture Alliance and PEI Fisheries Aquaculture and Environment for off bottom and water column shellfish aquaculture on PEI. DFO will develop an appropriate legal framework for implementing the chosen management actions through the enforcement of current legislation/regulations and/or new legislations/regulations.

## Scope and Approach

### Scope

The concept of adaptive management as a mitigation measure has evolved in Canadian Environmental Assessment Act screenings for projects. The principal of adaptive management is where a potential effect (usually long term or cumulative) is possible, but the assessor makes a determination of non-significance on the principle that if future monitoring or scientific research does show an effect, that there is a mechanism by which a resource manager or proponent can, and will, mitigate it.

This process would, on an annual basis review and summarize the appropriate research and environmental effects monitoring programs to provide the strategic direction that the stakeholders involved in this process must implement

management practices to promote an environmentally sustainable industry. An annual review will provide a forum (which will include the Core Process Stakeholders plus stakeholders such as Environment Canada) where stakeholders can network and refine their monitoring and research programs to reduce duplication of effort and integrate results for long term ecosystem based management. The review process is to be flexible enough to conduct issue scanning for pertinent and time sensitive topics and address them on a timely basis as part of this process. To ensure that management practices can be implemented and enforced, an appropriate legal framework for implementing chosen polices would be developed by DFO.

Approach

The PEI Area Director will appoint a non-voting chairperson to preside over the equally represented, core process stakeholders (DFO, PEI Aquaculture Alliance and PEI Fisheries Aquaculture and Environment) as they recommend the direction and implementation of required environmental management actions to the Area Director.

An integrated aquaculture/ecosystem management framework must be adaptive to the existing and new research and monitoring program results. PEI DFO Aquaculture Division will take a leadership role in this environmental adaptive management process. This would permit environmental considerations to be entrenched in aquaculture operation and planning. Adaptive management would be based around the establishment of ecosystem references as triggers for appropriate mitigation measures. This framework is to be focused on the parameters of environmental health and shellfish performance of the ecosystem with other environmental and industrial factors taken in context.

Development of a Management Toolbox

An adaptive management process must have the regulatory tools to implement chosen adjustments to management processes for the shellfish aquaculture industry. Approaches for shellfish aquaculture management have been reviewed and recommended in OCAD's recent legal review entitled "Legislative and Regulatory Review of Aquaculture in Canada" March 2001.

The PEI Area Manger will appoint a Regulation Task Force with a mandate and required time line to build a tool box of mechanisms to deal with potential issues. The Regulation Task Force will immediately identify the enforceable, existing regulations that can be used immediately for management action. This task force will review and opt the findings of the OCAD report to design an appropriate legal framework for implementing the chosen policies through amendment of current legislation/regulations and/or new legislation/regulations. This task force would commence their work by February 2002 to ensure that mechanisms are available for use when required.

Developing a Prospectus

The adaptive management program will be established in February 2002, to conduct the following on an annual basis:
-summarize underwater video program (PEI DFO Aquaculture Division) on benthic conditions associated with shellfish leases,
-summarize reporting on trend over time information (PEI DFO Aquaculture Division) on a bay by bay basis (in GIS format) from bay summaries of Annual Lease Production Reports,
-generate a prospectus style report (single page summaries similar to DFO Fisheries Management Stock Status Reports) of the ongoing research and monitoring programs on shellfish aquaculture on PEI (special attention to be paid to long term, trend over time monitoring reporting). The process stakeholder that has provided the largest percentage of monitoring/research funding is responsible to provide the annual prospectus summary report.

The information would be produced and distributed two weeks prior to an annual special meeting of the shellfish aquaculture Environmental Adaptive Management Committee (EAMC) members The chairperson and membership of the EAMC to be appointed by the DFO Area Director and is expected to include DFO Leasing Division, DFO Habitat Management, DFO Conservation and Protection, Environment Canada, PEI Aquaculture Alliance and PEI Department of Fisheries, Aquaculture and Environment. The purpose of the EAMC is to provide a forum in which stakeholders review the work accomplished, collaborate and then provide the Core Process Stakeholders with recommended management actions.

Appendix A contains the Prospectus Summary Format.

Meeting

At the meeting of the EAMC in March of each year the above mentioned information would be presented/reviewed and the following questions asked and answered as per the attached process flow diagram (Appendix B). It must be kept in context that this review is not intended to be conducted in exhaustive detail but that its intent is to provide the strategic direction of management. It may be appropriate for individual topics to be discussed at a preparation forum so as to distill the essence of the topic for presentation at the EAMC.

*1-Are there observations of any bay's benthic habitat and environment that would warrant the implementation of management measures? Are adjustments in the research/monitoring program required to effectively monitor this component for the purposes of adaptive management?*

*2-Are there changes over time of any bay's production trends (up or down) that would warrant the implementation of management measures? Are adjustments in the research/monitoring program required to effectively monitor this component for the purposes of adaptive management?*

*3-Are there advances in science/data (collected and reviewed on an annual basis) over time that would warrant the implementation of management measures related to culture practices (e.g. stocking density, husbandry practices)? Are adjustments in the research/monitoring program required to effectively monitor this component for the purposes of adaptive management?*

*4-Are there advances in standard protocols for assessing mussel/oyster performance and/or productive capacity (e.g. growth rate, meat yield, and yield per sock) that would provide a basis on which to establish management practices? Are adjustments in the research/monitoring program required to effectively monitor this component for the purposes of adaptive management?*

*5-Are there any changes over time of any bays water quality characteristics (nutrients, chl, temp, see PEIDFAE long term Estuary sampling of 20 bays) that would warrant the implementation of management measures? Are adjustments in the research/monitoring program required to effectively monitor this component for the purposes of adaptive management?*

*6-Are there advances in science/data (collected and reviewed on an annual basis) over time that would warrant the implementation of management measures related to sea birds and/or species at risk? Are adjustments in the research/monitoring program required to effectively monitor this component for the purposes of adaptive management?*

*7-Are there advances in science data (collected and reviewed on an annual basis) over time that would indicate that potential cumulative effects (e.g. land use, agriculture practices, roadway), receiving water environment) that would warrant the implementation of management measures? Are adjustments in the research/monitoring program required to effectively monitor this component for the purposes of adaptive management?*

*8-Are there any special issues (invasive species, toxic algae's) that require specific management measures? Are adjustments in the research/monitoring program required to effectively monitor this component for the purposes of adaptive management?*

The establishment of ecosystem references as triggers for appropriate mitigation measures is a key item to be attained over the evolution of the adaptive management process. The EAMC is to put forth ecosystem references for the Core Process Stakeholders to consider, set and adjust.

*There are ongoing initiatives on the majority of the above mentioned fields of research/monitoring presently sponsored by Federal/Provincial Governments and Industry. It will be by agreement of the majority of the EAMC that any adjustments to existing programs will be supported (this support does not by default mean financial support). All programs must clearly describe the deliverables and the context to which they would contribute to this adaptive management program. Process Stakeholders proposing adjustments to research monitoring programs will do so understanding that they will champion/garner support/support(resources or in kind) these adjustments.*

Appendix B contains the Environmental Adaptive Management Process feed back flow diagram.

Time Plan

The Environmental Adaptive Management Committee (EAMC) will meet, at a minimum, on an annual basis, review and discuss the Prospectus of existing monitoring and research results and where appropriate recommend the implementation of specific management measures to the Core Process Stakeholders. The meeting will be held mid March each year.

The membership on the EAMC will evolve as the environment and the shellfish aquaculture industry evolve. Three years after the implementation of the Environmental Adaptive Management process a comprehensive review of the Process Charter and its operation shall be undertaken by the Core Process Stakeholders. The Core Process Stakeholders shall within three months after the review is undertaken, submit a report on the review and recommendations.

**Assumptions**

General

-The objective of the first year will be to establish an EAMC network with all the participating stakeholders and where required, adjust and integrate existing science/monitoring programs for ecosystem based management.
-Presently there are ongoing science/monitoring programs on benthic habitat, production reporting, trend over time estuarine water quality, annual meat yields, mussel performance/culture practices, and sea duck interactions. These programs will be the basis by which future information will be collected to develop an integrated ecosystem based management.
-An EAMC representative will observe/participate in meetings on the above mentioned projects, so as to keep up to speed on issues.
-An adaptive management program will have ecosystem references established to be used as triggers for appropriate mitigation measures. In 2003 proposals for these triggers will be established.
-The consultation between process stakeholders as part of the EAMC is to establish by majority approval and refine the science and monitoring programs

for shellfish aquaculture and the ecosystem.

**Stakeholder Roles and Responsibilities**

DFO PEI Area Office, Headed by Area Director
-Appoints to a task force, and sets a time line, to build a regulatory tool box of environmental management mechanisms to implement the chosen policies.
-Area Director will appoint the EAMC.
-Ensures compliance of multi-disciplines within DFO.
-Participates in EAMC forum and as a Core Process Stakeholder.
-Responsible to ensure that any environmental management measures that are a result of the EAMC and recommendations from Core Process Stakeholders are implemented with appropriate regulation mechanisms to ensure compliance by industry.

*DFO PEI Aquaculture Division*
-Prepares annual GIS based summary (graphs showing accumulated data over time) of bay by bay, by species, summaries of Annual Lease Reports for EAMC summary presentation.
-Prepares annual summary of data observations (for EAMC summary presentation) from underwater video program conducted by PEI Aquaculture Division.
-Coordinates Prospectus summary reports for projects originating within DFO.
-Assembles Prospectus reports from all contributors (DFO, PEI, Industry, Universities) under one cover and distributes to EAMC two week prior to meeting.
-Is responsible for the organization and conduct of the EMAC meetings.
-Participates in EAMC forum.
-Responsible to summarize results of annual EAMC forum and Prospectus and to distribute to participants within six weeks of forum.
*-PEI DFO Habitat Management Division*
-Prepares Prospectus reports from all contributors in DFO Habitat Management Division.
-Participates in EAMC forum.
*DFO science-*
-Prepares Prospectus reports from all potential contributors in DFO science.
-Participates in EAMC forum.

PEI Aquaculture Alliance
-Prepares and presents an annual summary of the environmental aspects (self-audits and independent audits) of the PEI Aquaculture Alliance, Shellfish Aquaculture Environmental Code of Practice.
-Prepares Prospectus reports from Industry sponsored environmental initiatives (includes Universities).
-Participates in EAMC forum and as a Core Process Stakeholder.

Prince Edward Island Department of Fisheries Aquaculture and Environment
-Prepares annual summary of bay by bay, Estuary water quality survey results for annual EAMC summary presentation.
-Prepares Prospectus reports from all contributors from PEI sponsored environmental initiatives (includes Universities, other Province of PEI Departments such as Agriculture within context of cumulative affects).
-Participates in EAMC forum and as a Core Process Stakeholder.

## Agreement

We the undersigned hereby agree to the terms and conditions set out in this Charter. No changes can be made to the Charter without agreement of all Core Process Stakeholders. Please note in order for the PEI Aquaculture Alliance to have a recognized sign on to this Process Charter (their own policy), two signatures are required.

| Stakeholder | Print Name | Signature | Date |
|---|---|---|---|
| DFO PEI Area Office | | | |
| PEI Aquaculture Alliance | | | |
| | | | |
| Prince Edward Island Department of Fisheries Aquaculture and Environment | | | |

## APPENDIX 9. SUMMARY OF THE STEPS INVOLVED IN THE PEI SHELLFISH AQUACULTURE NWPA AND CEAA ASSESSMENT PROCESS

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| Jan. 1999 | Federal legal opinion is released stating that moored aquaculture sites are subject to CEAA review. |
| July 1999 | PEI Aquaculture Assessment Operational Team is established to ensure the effective development and seamless delivery of government policies and operational plans for the assessment of PEI sites under the NWPA and CEAA. |
| Sept. 1999 | DFO, Province of PEI and PEI Aquaculture Alliance sign on to co-management agreement which results in a renewed leasing program. |
| Oct. 1999 | Waterway Evaluation Steering Committee is formed to develop and implement an area specific interim lease marking scheme for aquaculture sites in PEI waterways. |
| Dec. 1999 | Bay by bay meetings are held with Industry members to facilitate the development of the standardized marking system. The last bay meeting is held in February 2000. |
| Jan. 2000 | PEI Aquaculture Operational Plan – Phase 1 is developed to establish a risk based strategy to mitigate boating safety concerns and provide long term stability and security for the aquaculture industry on PEI. |
| May 2000 | The new buoy marking standard developed by the PEI Marking Committee is implemented in PEI waterways. |
| Sept. 2000 | Environmental Issues Sub-Committee is formed to examine the environmental issues related to the environmental assessment and sustainability with the PEI Aquaculture Industry. |
| Nov. 2000 | A workshop is held with representatives from DFO-CCG and Industry to determine the key issues and concerns with the evolving NWPA review process. |
| Feb. 2001 | Phase II of the Operational Plan is developed and reconfirms that the review would be conducted Island wide, using the bay-by-bay approach. |

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| March 2001 | Meeting are held with each individual grower to finalize and review lease acreage and corner coordinates for each site.<br><br>Model Class Screening Report, to cover existing sites and "standard new lease applications" is finalized and submitted to DFO and Environment Canada. For various reasons this proposed model is not accepted by DFO National and Regional Headquarters. |
| June 2001 | DFO Aquaculture Staff and NWPA Officer conduct on the water assessments in each bay to assess potential navigation impacts and to verify all site locations and boundaries. |
| Sept. 2001 | Advertisements advising that PEI leaseholders are applying for NWPA approval appear in the Canada Gazette and local PEI papers. A letter review panel is formed (DFO, PWGSC and Provincial staff) to address any comments received based on navigation and environmental issues.<br><br>PWGSC is contracted by DFO to conduct Environmental Assessments, including the determinations for those bays with surface and off-bottom aquaculture. A CEAA assessment team is assembled to compile the screening documents, with DFO as the Responsible Authority under CEAA. Province wide assessments are divided into 15 regional projects with the grouping based primarily on geographic location.<br><br>DFO Habitat and PWGSC begin conducting consultations in accordance with the Federal Coordination Regulations. |
| Oct. 2001 | DFO and PWGSC begin consultations with the PEI Aboriginal community. Meetings are held with the Abegweit First Nation, Lennox Island First Nation and the Native Council of PEI.<br><br>Meetings begin between individual grower and a shellfish grower liaison to complete the Project Environmental Information Form. The form affirms that the site is operated in accordance with existing policies and regulations. |
| Jan. 2002 | PEI Shellfish Aquaculture Environmental Policy and Environmental Code of Practice are released. The document was developed over a two year period and involved a comprehensive consultation process. |

PEI Shellfish Aquaculture Environmental Adaptive Management Process is developed as mitigation against the uncertain likelihood of significant adverse effects over time. It is based on the principle that if future monitoring or scientific research shows an effect; there will be a mechanism by which DFO will require a resource manager or proponent to conduct mitigation. The SEAM committee continues to meet a minimum of twice a year.

Feb. 2002

To address concerns raised regarding the sustainability of shellfish aquaculture in Tracadie and Winter Bays, the growers in Tracadie Bay hire a facilitator to develop a Mussel Aquaculture Management Plan for Tracadie Bay. By signing onto the plan, growers agree to implement a maximum mussel density in Tracadie Bay and participate in the various monitoring initiatives aimed at achieving the common goal of a healthy Bay and sustainable industry.

NWPA and CEAA screening approval documents are reviewed and issued for 426 surface and/or off-bottom aquaculture sites in PEI.

March 2003

As part of the commitment to ensure grower co-operation with the Mussel aquaculture Management Plan for Tracadie Bay, DFO, in consultation with the PEI government and the PEI Aquaculture Alliance, develop the Tracadie Bay Management Plan Monitoring Protocol.

## APPENDIX 10. DEFINITIONS

***Aquaculture***: The cultivation of aquatic organisms, including fish, molluscs, crustaceans and aquatic plants.

***Grower***: A person engaged in the culture of mussels and oysters using extensive or intensive methods in order to increase the production of yield per unit area or volume to above that obtained naturally in a particular aquatic environment.

***Lease:*** A legal document transferring a defined geographic area in a maritime environment approved for the purposes of culturing shellfish.

***Off-Bottom Culture***: The practice of culturing bottom-dwelling shellfish on racks or tables raised a short distance from the natural substrate.

***Substrate***: Attachment surface or bottom material in which organisms can attach or live-within.

***Water Column Culture:*** The practice of culturing shellfish on hanging culture apparatus suspended in the water by floats.

## APPENDIX 11. LIST OF ACRONYMS

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| **ACOA** | Atlantic Canada Opportunities Agency |
| **CEAA** | Canadian Environmental Assessment Act |
| **CWS** | Canadian Wildlife Service |
| **DAFE** | PEI Dept. of Fisheries, Aquaculture and Environment |
| **DFO** | Department of Fisheries and Oceans |
| **DFO-CCG** | Department of Fisheries and Oceans – Canadian Coast Guard |
| **EA** | Environmental Assessment |
| **EC** | Environment Canada |
| **FCR** | Federal Coordination Regulations |
| **MCSR** | Model Class Screening Report |
| **NWP** | Navigable Waters Protection |
| **NWPA** | Navigable Waters Protection Act |
| **OCAD** | Office of the Commissioner of Aquaculture Development |
| **PEIAA** | Prince Edward Island Aquaculture Alliance |
| **PEIF** | Project Environmental Information Form |
| **PC** | Parks Canada |
| **PWGSC** | Public Works Government Services Canada |
| **RA** | Responsible Authority |
| **SAECOP** | Shellfish Aquaculture Environmental Code of Practice |
| **SEAM** | Shellfish Environmental Adaptive Management |
| **TC** | Transport Canada |
| **TEK** | Traditional Ecological Knowledge |

| | |
|---|---|
| **VEC** | Valued Ecosystem Components |
| **WESC** | Waterway Evaluation Steering Committee |